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ABSTRACT

The document presents procedures to teach and test the understanding of class, sequential order, and space in handicapped children. Sections briefly address the following topics: art symbols and thinking, left and right hemisphere thinking, testing and developing the concept of class, testing and developing concepts of space, testing and developing concepts of order, comparing handicapped and normal, creative growth, adult stroke patients, and observations. A glossary concludes the document. Sample free hand drawings are offered. (SBH)

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Art as Language

FOR THE HANDICAPPED

RAWLEY A. SILVER

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

EC 123949

ART AS LANGUAGE,
for the Handicapped

an exhibition based on the work of
Rawley A. Silver, EdD, ATR and her book,
DEVELOPING COGNITIVE AND CREATIVE SKILLS
THROUGH ART (University Park Press, 1978).

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INTRODUCTION

WHEN CHILDREN HAVE HANDICAPS WE ARE SO PREOCCUPIED WITH THEIR LIMITATIONS THAT WE LOSE SIGHT OF THEIR STRENGTHS. SOME SKILLS DEVELOP DESPITE IMPAIRMENTS: OTHERS GROW BECAUSE OF THEM.

ONE SUCH POTENTIAL, OFTEN OVERLOOKED, IS THE ABILITY TO REPRESENT THOUGHTS AND FEELINGS VISUALLY. FOR THE CHILD WHO HAS DIFFICULTY LEARNING LANGUAGE, IMAGERY MAY BYPASS VERBAL WEAKNESSES BY CAPITALIZING ON VISUAL STRENGTHS.

CAN THE DRAWINGS OF HANDICAPPED CHILDREN PROVIDE CLUES TO WHAT THEY KNOW AND HOW THEY THINK OR FEEL? CAN THESE CHILDREN LEARN THROUGH VISUAL FORMS THE CONCEPTS THAT ARE USUALLY LEARNED THROUGH SPEECH? THIS EXHIBIT PRESENTS THE ART PROCEDURES DEVISED BY DR. RAWLEY SILVER TO HELP ANSWER THESE QUESTIONS. THE PROCEDURES WERE DESIGNED TO TEACH - AND TEST - THE UNDERSTANDING OF THREE CONCEPTS: CLASS, SEQUENTIAL ORDER, AND SPACE, CITED BY JEAN PIAGET AND OTHER INVESTIGATORS AS BEING FUNDAMENTAL TO MATHEMATICS AND READING. THIS EXHIBITION PRESENTS ONE TECHNIQUE AND ONE POINT OF VIEW CURRENTLY BEING EXPLORED TO PROVIDE EDUCATORS WITH TOOLS FOR DEVELOPING THESE CONCEPTS.

THE DRAWINGS AND PAINTINGS IN THIS EXHIBIT WERE CREATED BY STUDENTS IN EXPERIMENTAL ART CLASSES IN SPECIAL SCHOOLS. THESE STUDENTS WERE HANDICAPPED TO A DEGREE THAT PREVENTED THEIR USING LANGUAGE FREELY IN READING, WRITING, TALKING, OR UNDERSTANDING WHAT WAS SAID. REGARDLESS OF THEIR HANDICAPS, SOME ARE GIFTED. NAMES HAVE BEEN CHANGED TO SAFEGUARD THEIR PRIVACY.

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ART SYMBOLS AND THINKING

CAN ART SYMBOLS TAKE OVER SOME OF THE FUNCTIONS OF LANGUAGE SYMBOLS FOR CHILDREN WHO CANNOT LEARN IN THE USUAL WAY — THROUGH WORDS?

LANGUAGE IS OBVIOUSLY RELATED TO THINKING, BUT WHETHER IT IS ESSENTIAL IS OPEN TO QUESTION. RECENT RESEARCH BY PIAGET AND OTHER INVESTIGATORS SHOWS THAT HIGH-LEVEL THINKING CAN AND DOES OCCUR WITHOUT VERBAL LANGUAGE.

ART SYMBOLS, LIKE LANGUAGE SYMBOLS, ARE A WAY OF LABELING OR COMMUNICATING PERCEPTIONS AND EXPERIENCES. THE CHILD WITH "INADEQUATE" LANGUAGE IS HANDICAPPED IN PRESENTING HIS THOUGHTS EFFECTIVELY. EVEN SO, HIS CAPACITY FOR SYMBOLIZING MAY BE INTACT, AND HE MAY BE ABLE TO PRESENT HIS THOUGHTS NONVERBALLY BY DRAWING THEM.

1. MAN IN THE ABSTRACT?

David, 15

Deaf

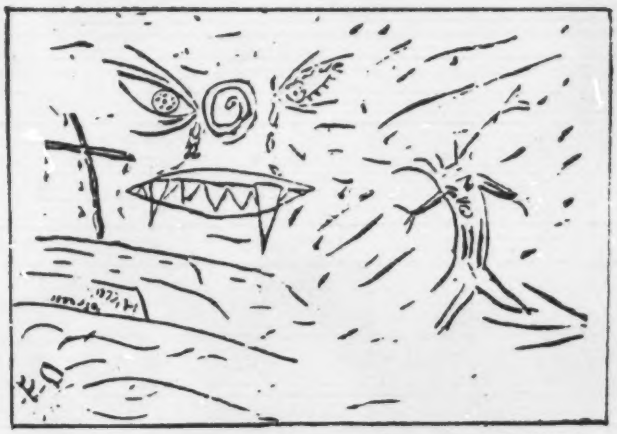
David did not want to talk about his painting. Although we cannot know what he had in mind, his painting is highly suggestive. The figure - a particular man or man in the abstract - is small, alone, unprotected, with arms raised, perhaps in defiance or in supplication.

2. "THE MONKEY GOT AWAY FROM THE BEAR . . . "

Dan, 11

Expressive language impairment and damage to the central nervous system

Children too young to represent their ideas sometimes talk as they scribble; their words conveying what they cannot yet draw. Some older children with communication disorders do the same. Dan explained his painting: "The monkey got away from the bear and went into the building." He apparantly heard normally, but was unable to read and his visual-motor coordination was poor.



3. MOTHER'S GRAVE

Fred, 11

Receptive and expressive language impairment

Some language-impaired children excel in their ability to represent their feelings. Fred identified the face as his father and the tree as himself; the name on the tombstone was his mother's. A teacher asked him if his mother had died, pointing backward over her shoulder. He shook his head, no, pointing forward "to the future." We can only speculate whether his drawing represented fear of her death or wish for it.

4. SELF ON MOTORCYCLE

Kenneth, 14

Receptive and expressive language impairments; bilateral hearing loss; and motor handicaps suggesting cerebral palsy

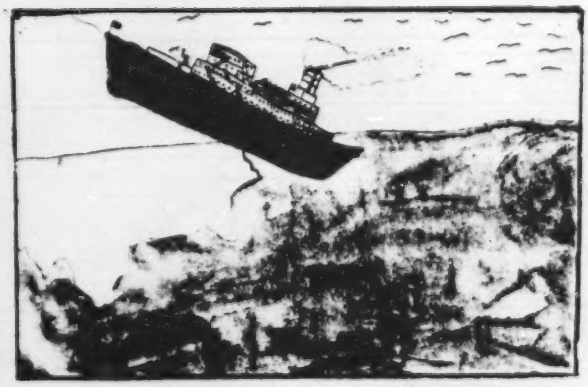
Kenneth was conspicuously small for his age; but once, when angry, he picked up and threw a school desk.

5. FRANKENSTEIN

Ralph, 12

Receptive and expressive language impairment

Frankenstein could be a particular person or he could represent someone else in disguise.



6. SHIP CAUGHT ON AN ICEBERG

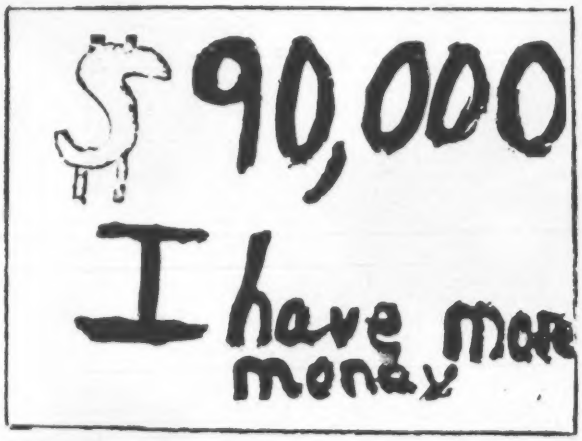
Ralph's ship could also represent someone in trouble.

LEFT AND RIGHT HEMISPHERE THINKING

LANGUAGE DISORDERS MAY RESULT FROM DAMAGE TO THE BRAIN'S LEFT HEMISPHERE WHILE VISUAL-MOTOR DISORDERS TEND TO OCCUR IN THE RIGHT.

THE LEFT HEMISPHERE SEEMS TO BE SPECIALIZED FOR ANALYTICAL, SEQUENTIAL, AND CONCEPTUAL THINKING, AS WELL AS LANGUAGE. SUBJECTS SUCH AS SCIENCE, MATHEMATICS, LOGIC, AND HISTORY MAY BE HANDLED HERE. THE RIGHT HEMISPHERE SEEMS TO CONTROL SPATIAL AND SIMULTANEOUS THINKING, AND VISUAL-SPATIAL SKILLS. CREATIVITY AND INTUITION, ART AND METAPHOR, MUSIC, POETRY AND DANCE MAY COME FROM THIS LOBE.

IT IS KNOWN THAT THE HEMISPHERES SHARE INFORMATION. PERHAPS WE CAN USE RIGHT-HEMISPHERE SKILLS (SUCH AS DRAWING) TO IDENTIFY AND ASSESS LEFT-HEMISPHERE SKILLS (SUCH AS THE BASIC COGNITIVE ABILITIES) OF INARTICULATE CHILDREN AND ADULTS. PERHAPS SUCCESSES IN RIGHT-HEMISPHERE SKILLS WILL CARRY OVER TO LEFT-HEMISPHERE THINKING. CURRENT RESEARCH IS SEEKING THE ANSWERS.



7. "$90,000 I HAVE MORE MONEY"

Eileen, 12

Language and hearing impairments

8. CAR CRASH

Mark, 12

Language and hearing impairments

Some children depicted scenes of violence almost as soon as they realized they could paint what they wished. Mark liked to paint traffic accidents.

TESTING AND DEVELOPING CONCEPTS OF A CLASS

THE CONCEPT OF A CLASS (OR GROUP OF OBJECTS) INVOLVES ABILITY TO SELECT AND COMBINE INTO A CONTEXT, SUCH AS SELECTING WORDS AND COMBINING THEM INTO A SENTENCE. SELECTING AND COMBINING ARE FUNDAMENTAL IN READING, MATHEMATICS, AND THE VISUAL ARTS.

DRAWING FROM IMAGINATION

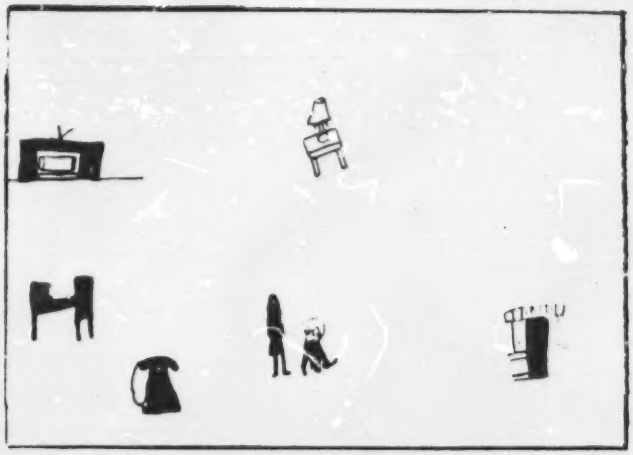
TO DETERMINE THIS ABILITY (TO FORM THE CONCEPT OF A CLASS), HANDICAPPED STUDENTS WERE ASKED TO SELECT TWO IMAGES (ONE FROM EACH GROUP) AND COMBINE THEM INTO A DRAWING THAT TOLD A STORY. THEY WERE ASKED NOT TO COPY THE IMAGES, BUT COULD ADD TO THEIR DRAWINGS WHATEVER THEY NEEDED TO MAKE THEM MORE INTERESTING.

SCORING THE DRAWINGS

A 1-TO-5 POINT SCALE WAS USED TO RATE ABILITY TO SELECT, COMBINE AND REPRESENT.

ABILITY TO SELECT

- 1 Point - Subjects are unrelated in size or placement; suggesting no associations between them.
- 3 Points - Subjects show what they can do or what can be done with them; suggest selecting at the concrete or functional level of thought.
- 5 Points - Subjects show associations going beyond the merely concrete; suggest abstract thinking or imaginary play.



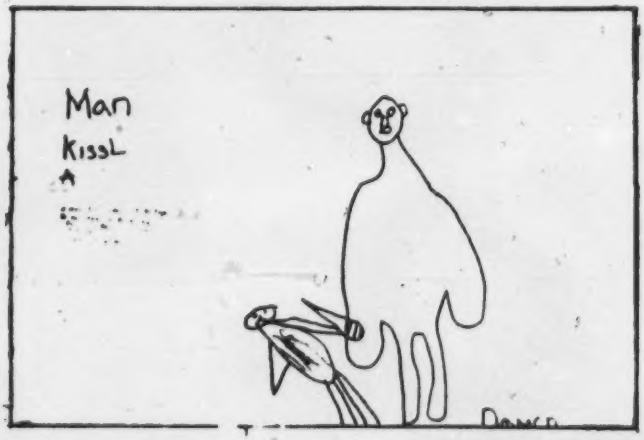
9. SELECTING AT THE PERCEPTUAL OR FUNCTIONAL LEVEL

Betty, 13

Receptive language impairment and moderate hearing loss in both ears

While Betty did not initially relate the objects in size or placement in her drawing, she did add a leash to connect the dog to the girl.

Score: 2. Selecting based on perception and function



10. SELECTING AT THE ABSTRACT OR CONCEPTUAL LEVEL

Damon, 10

Expressive language impairment

Damon received the highest score for ability to select. He chose images of a knife and the head and shoulders of a man. His words ("kills" is scrambled and the title is incomplete) are charged with feeling.

Score: 5. Selecting based on fantasy

ABILITY TO COMBINE

BEFORE THEY TURN SEVEN, CHILDREN TYPICALLY REGARD OBJECTS IN ISOLATION. THEY BEGIN TO RELATE OBJECTS ON THE BASIS OF PROXIMITY, THEN DEVELOP A FRAME OF REFERENCE - A BASE LINE - AND RELATE OBJECTS TO EACH OTHER ALONG THIS LINE. GRADUALLY, THEIR DRAWINGS BECOME MORE COORDINATED AS THEY CONSIDER DISTANCES AND SPATIAL RELATIONSHIPS.

SCORING

1 Point - Subjects seem unrelated or are related simply by proximity.

3 Points - Subjects are related by a base line (the bottom of the paper may serve as a base line).

5 Points - There is overall coordination with attention given to the paper as a whole.

ABILITY TO REPRESENT

TO IMAGINE AND DRAW AN OBJECT, A CHILD MUST BE ABLE TO REMEMBER IT. EARLY REPRESENTATIONS ARE CONVENTIONAL OR IMITATIVE. GRADUALLY, THEY BECOME MORE THOUGHTFUL AND PERSONAL.

SCORING

1 Point - Imitative or schematic (stick figures, cartoon styles, copying).

3 Points - Models are restructured.

5 Points - Highly imaginative, inventive, personal, expressive; models are transformed.

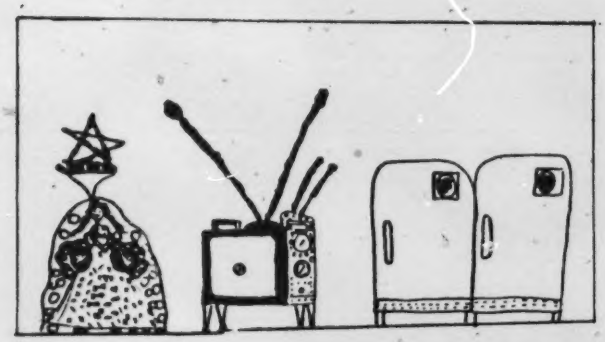
11. INSIDE WATCHING TV, OUTSIDE SKATING AND BICYCLING

Dan, 15

Normal hearing with expressive language impairment

This drawing seems fragmentary and uncoordinated, with subjects floating in space. (Dan drew Fig. 2 when he was eleven.)

Score: Ability to select - 3 (on the basis of function)
Ability to combine - 1 (on the basis of proximity)
Ability to represent - 3 (models are restructured)



12. WEDDING PRESENTS

Daniel, 9

Receptive and expressive language impairment; regressive speech patterns following surgery

Daniel chose images of a bride, refrigerator and TV set. He transformed the bride, creating a full-length frontal view and inventing a remarkable costume. He also gave the bride <u>two</u> refrigerators.

Score: Ability to select - 3 (on the basis of function)
Ability to combine - 3 (along a base line)
Ability to represent - 5 (imaginative, inventive)

TO DEVELOP ABILITY TO FORM CONCEPTS AT THE LEVEL OF CLASS OR FUNCTION, HANDICAPPED STUDENTS WERE ASKED TO SELECT OTHER IMAGES AND COMBINE THEM IN DRAWINGS AND PAINTINGS. WE EMPHASIZED CONTENT AND MEANING, RATHER THAN ABSTRACT DESIGNS: EXPLORATORY LEARNING, RATHER THAN DIRECTIVE TEACHING, AND ELICITING RESPONSES, RATHER THAN INSTRUCTING.

TO NOTE CHANGES IN ABILITY, 68 STUDENTS, AGES 7 TO 15, TOOK THE DRAWING FROM IMAGINATION TEST AT BOTH THE BEGINNING AND END OF THE ART PROGRAM. THE EXPERIMENTAL GROUP - 34 HANDICAPPED STUDENTS WHO HAD ATTENDED THE ART PROGRAM - SHOWED SIGNIFICANT IMPROVEMENT IN SELECTING, COMBINING, AND REPRESENTING. THE CONTROL GROUP - 34 HANDICAPPED STUDENTS WHO HAD NO ART PROGRAM - SHOWED NO IMPROVEMENT.

TO COMPARE THE HANDICAPPED STUDENTS WITH "NORMAL" STUDENTS, THE TEST WAS GIVEN (ONCE) TO 68 STUDENTS IN A SUBURBAN PUBLIC SCHOOL. THE "NORMAL" STUDENTS HAD SLIGHTLY HIGHER SCORES THAN THE HANDICAPPED STUDENTS BEFORE THE ART PROGRAM BEGAN. AFTER THE PROGRAM, HOWEVER, THE HANDICAPPED STUDENTS IN THE EXPERIMENTAL GROUP HAD SIGNIFICANTLY HIGHER SCORES THAN THE "NORMAL" STUDENTS.*

*This study and others mentioned here are described in detail in Developing Cognitive and Creative Skills Through Art, by Rawley A. Silver, University Park Press, 1978.

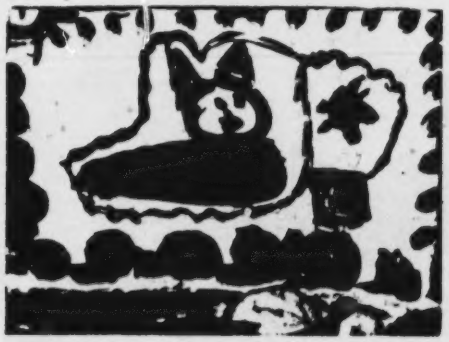
13. CAT AND MICE

Tom, 14

Receptive and expressive language impairments. Hearing loss; inadequate retention of words

Tom chose a cat, combining it with mice in a way that suggests the mice are in trouble

Score: 5 in each category



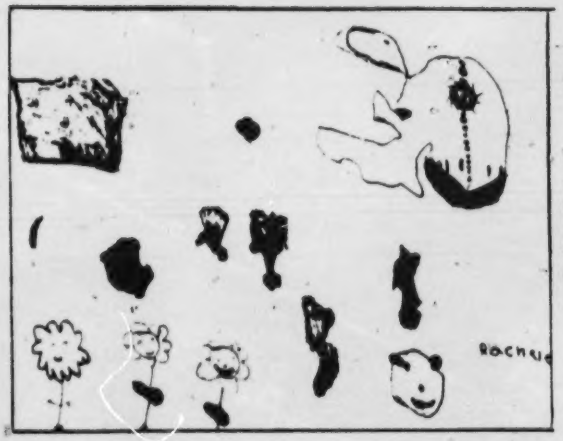
14. "MY CAT IN A GARDEN"

Rachele, 9

Receptive and expressive language impairments, poor auditory receptive skills, motor handicaps

Rachele associated the cat with flowers rather than mice (perhaps with life rather than death). This painting was produced in her last art period.

Score: 5 in each category



15. RACHELE'S FIRST DRAWING

Compare Rachele's last painting with her first. It is typical of the fragmentary drawings produced by many students who seem unable, at first, to select on the basis of class or function, or to combine their subjects meaningfully.

Score: 1 in each category

TESTING AND DEVELOPING CONCEPTS OF SPACE

CONCEPTS OF SPACE REQUIRE ABILITY TO DISCERN SPATIAL RELATIONSHIPS BETWEEN OBJECTS. AGAIN, SPATIAL CONCEPTS ARE BASIC IN READING AND MATHEMATICS.

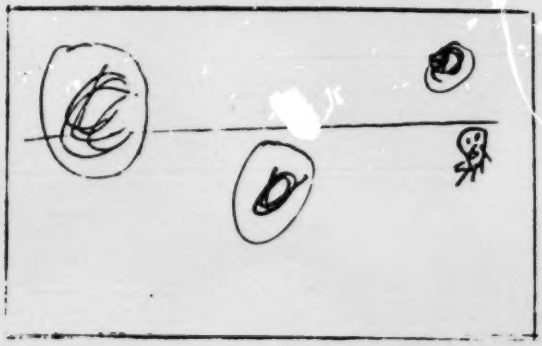
DRAWING FROM OBSERVATION

IN THIS TASK, WE ASKED A GROUP OF "LANGUAGE-IMPAIRED" STUDENTS TO DRAW AN ARRANGEMENT OF THREE CYLINDERS AND A TOY BUG. EVEN THOUGH WE DID NOT CORRECT MISTAKES, THEIR DRAWINGS IMPROVED WITHIN A SHORT INTERVAL. CONSEQUENTLY, WE PROVIDED FREQUENT OPPORTUNITIES TO DRAW OTHER OBJECTS FROM OBSERVATION.

EACH STUDENT WAS ASKED TO DRAW FROM OBSERVATION, BOTH AT THE BEGINNING AND END OF THE ART PROGRAM, TO EVALUATE HIS ABILITY TO ACQUIRE AND EXPRESS CONCEPTS OF SPACE.

SCORING THE DRAWINGS

DRAWINGS ARE SCORED 0 TO 5 POINTS FOR ABILITY TO REPRESENT ACCURATELY THE LEFT-RIGHT, ABOVE-BELOW, AND FRONT-BACK RELATIONSHIPS.



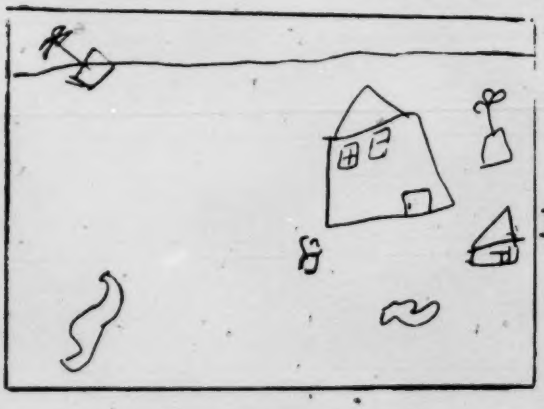
16. BEN'S FIRST DRAWING FROM OBSERVATION

Ben, 14

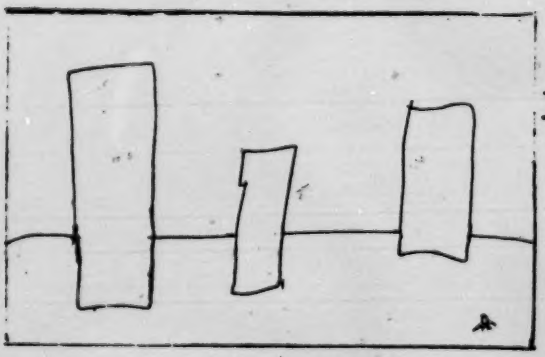
Expressive language impairments and poor visual-motor coordination

In his first attempt, Ben represented the cylinders as circles, with scribbles inside. He drew them not as they appeared from where he sat, but as though he had a bird's eye view. One cylinder floats above the table.

Score: left-right - 3
above-below - 0
front-back - 3



17. BEN'S SECOND DRAWING FROM OBSERVATION, USING A TOY LANDSCAPE AS MODEL

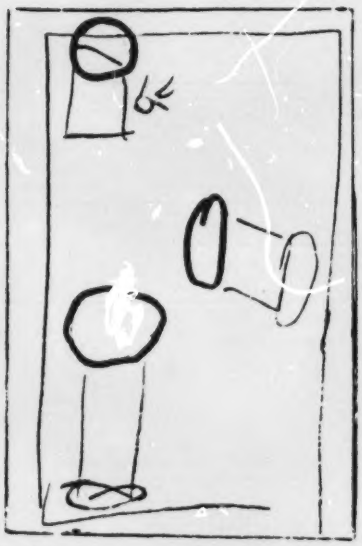


18. BEN'S THIRD DRAWING FROM OBSERVATION

In these art classes, mistakes were not pointed out. Therefore, Ben's gains reflect his own observations and corrections. This drawing shows increased awareness of the cylinder arrangement.

Score: left-right - 5
above-below - 3
front-back - 3

AGAIN, THIS TASK WAS GIVEN TO CONTROL AND EXPERIMENTAL GROUPS, AND EVALUATIONS COMPLETED AFTER THE ART PROGRAM. STUDENTS IN THE EXPERIMENTAL (ART PROGRAM) GROUP SHOWED SIGNIFICANT IMPROVEMENT, WHEREAS THE CONTROL GROUP DID NOT. THE "NORMAL" STUDENTS (TESTED ONLY ONCE) HAD SLIGHTLY HIGHER SCORES THAN THE HANDICAPPED STUDENTS BEFORE THE ART PROGRAM. AFTER THE ART PROGRAM, THE EXPERIMENTAL GROUP HAD SLIGHTLY HIGHER SCORES, BUT THESE DIFFERENCES WERE NOT SIGNIFICANT.

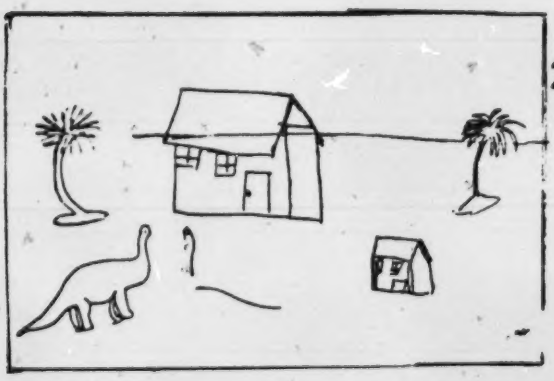


19. DAN'S FIRST DRAWING FROM OBSERVATION

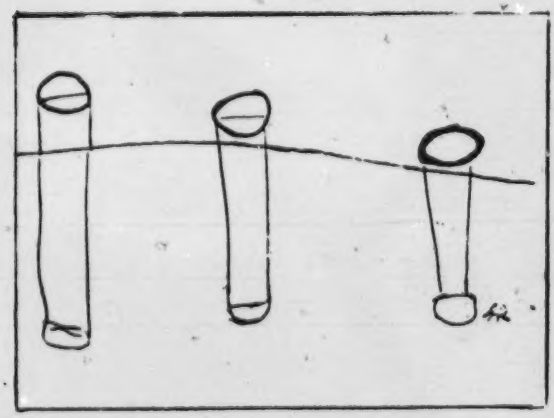
Dan, 15

Two cylinders are vertical, while the bug and third cylinder are horizontal. Dan, who also drew Figures 11 & 2, is unable to read.

Score: left-right - 1
above-below - 0
front-back - 1



20. DAN'S SECOND DRAWING FROM OBSERVATION



21. DAN'S THIRD DRAWING FROM OBSERVATION

(Since he was sitting on the opposite side of the arrangement, the cylinders are reversed.)

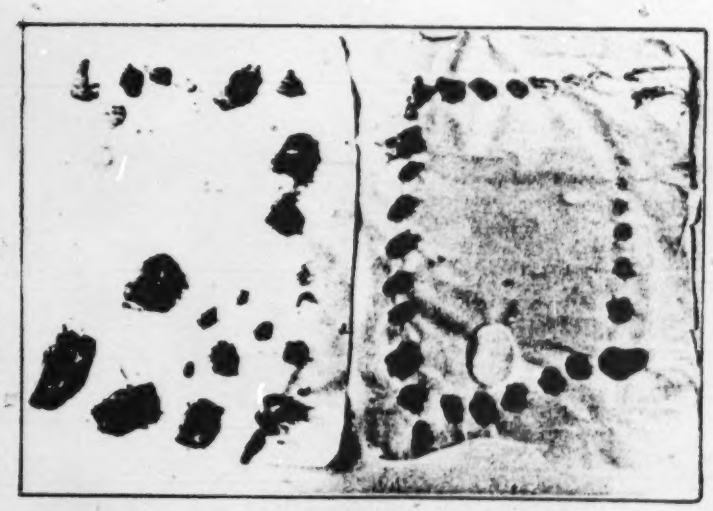
Score: left-right - 5
above-below - 5
front-back - 3

TESTING AND DEVELOPING CONCEPTS OF ORDER

THE ABILITY TO ARRANGE A SERIES OR SEQUENCE OF OBJECTS IS ALSO LINKED WITH MATHEMATICS AND READING. (SOME INVESTIGATORS HAVE FOUND THAT CHILDREN WITH READING PROBLEMS HAVE MORE DIFFICULTY WITH TESTS OF SEQUENCING THAN WITH TESTS OF SPACE AND CLASS.) SEQUENCING IS USUALLY DEVELOPED THROUGH LANGUAGE, BUT IT CAN BE PROMOTED THROUGH THE VISUAL ARTS AS WELL.

PAINTING

THIS TEACHING PROCEDURE INVOLVES PAPER PALETTES, PALETTE KNIVES, AND POSTER PAINT. STUDENTS PUT DABS OF TWO COLORS THEY SELECT IN THE CORNERS OF THE PALETTE. DABS OF BLACK AND WHITE GO IN THE OTHER CORNERS. BY ADDING MORE AND MORE OF ONE COLOR TO ANOTHER, A CIRCLE OF SEQUENCES CAN BE COMPLETED. IN THE ART PROGRAM, ONLY FIVE COLORS OF PAINT WERE PROVIDED; BLACK, WHITE, AND THE THREE PRIMARY COLORS - RED, BLUE AND YELLOW. FROM THESE, STUDENTS MIXED GREENS, ORANGES, PURPLES AS WELL AS TINTS AND SHADES, AND INVENTED COLORS OF THEIR OWN.



22. PAINTING SEQUENCES

The right palette shows the response of a child who could produce sequences. On the left is the response of a child who could not.

PREDICTIVE DRAWING

THE PREDICTIVE DRAWING TEST WAS USED TO EVALUATE AND NOTE CHANGES IN A STUDENT'S ABILITY TO SEQUENCE EVENTS BY ANTICIPATING CHANGES IN HORIZONTAL AND VERTICAL RELATIONSHIPS. SCORED ON A 1-TO-5 SCALE, IT IS BASED ON STAGES OF COGNITIVE DEVELOPMENT OBSERVED BY THE SWISS PSYCHOLOGISTS, JEAN PIAGET AND BARBEL INHELDER.

STUDENTS WERE ASKED TO FILL IN OUTLINE DRAWINGS SHOWING:

A. HOW BOTTLES WOULD LOOK HALF FILLED WITH WATER
B. HOW A HOUSE WOULD LOOK ON A STEEP MOUNTAIN SLOPE

SCORING HORIZONTAL CONCEPTS

1 Point - water in tilted bottle is parallel to sides or bottom
3 Points - water is oblique
5 Points - water parallels base line

SCORING VERTICAL CONCEPTS

1 Point - house is perpendicular to slope
3 Points - house is vertical, but with questionable support
5 Points - house is vertical with visible support

AGAIN, HANDICAPPED STUDENTS IN THE EXPERIMENTAL (ART PROGRAM) GROUP IMPROVED SIGNIFICANTLY IN HORIZONTAL AND VERTICAL CONCEPTS, WHILE STUDENTS IN THE CONTROL GROUP DID NOT IMPROVE.

HORIZONTAL CONCEPTS

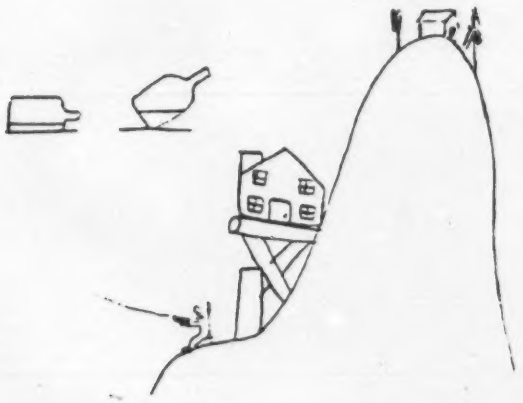
THE HANDICAPPED STUDENTS HAD SIGNIFICANTLY LOWER SCORES THAN THE "NORMAL" STUDENTS BEFORE THE ART PROGRAM BEGAN. AFTERWARD, HOWEVER, THERE WAS NO SIGNIFICANT DIFFERENCE BETWEEN THEM.

VERTICAL CONCEPTS

ALTHOUGH THE HANDICAPPED STUDENTS IN THE EXPERIMENTAL GROUP HAD SIGNIFICANTLY LOWER SCORES THAN THE "NORMAL" STUDENTS BEFORE THE ART PROGRAM, THEY ENDED UP WITH SIGNIFICANTLY HIGHER SCORES. (IF "NORMAL" AND HANDICAPPED BOTH HAD RECEIVED THE ART PROGRAM, CHANCES ARE THAT BOTH GROUPS WOULD HAVE IMPROVED).

THE TESTING AND TEACHING PROCEDURES WERE USED AGAIN IN SUBSEQUENT STUDIES OF CHILDREN WITH LEARNING DISABILITIES AND CHILDREN WITH SPECIAL EDUCATIONAL NEEDS. THESE CHILDREN ALSO SHOWED SIGNIFICANT GAINS.

23. PREDICTIVE DRAWING, HANDICAPPED STUDENT

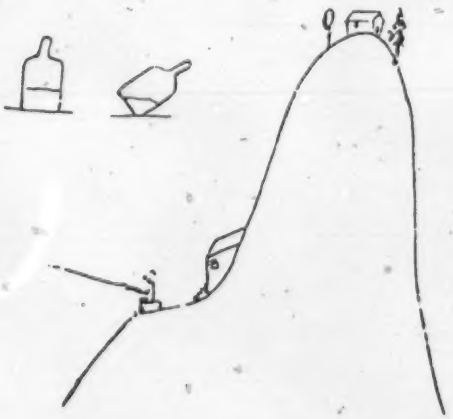


George, 13

Expressive and receptive language impairments

Score: horizontality - 5
verticality - 5

24. PREDICTIVE DRAWING, HANDICAPPED STUDENT



Manuel, 12

Receptive and expressive language impairments

Score: horizontality - 4
verticality - 4

25. PREDICTIVE DRAWING, NORMAL STUDENT

Judy, 14

Score: horizontality - 1
verticality - 1

(her pencil drawing was "corrected" in ink by a friend in the next seat.)

25

COMPARING "HANDICAPPED" AND "NORMAL"

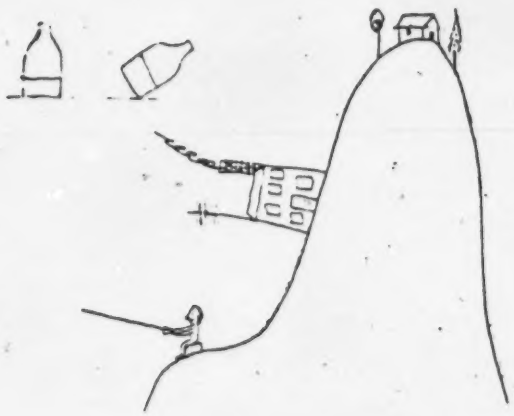
SOME RESULTS WERE SURPRISING. ONLY 18 OF THE 136 "NORMAL" AND HANDICAPPED STUDENTS HAD TOP SCORES IN THEIR FIRST PREDICTIVE DRAWINGS, AND 8 OF THE 18 WERE "HANDICAPPED". GEORGE, FOR EXAMPLE, PRODUCED FIGURE 23. MANUEL PRODUCED FIGURE 24.

ON THE OTHER HAND, SOME "NORMAL" STUDENTS IN THE SUBURBAN PUBLIC SCHOOL HAD VERY LOW SCORES. JUDY, FOR EXAMPLE, PRODUCED FIGURE 25. LORI, DESCRIBED BY HER TEACHER AS ONE OF THE TWO BRIGHTEST CHILDREN IN HER CLASS, ALSO SCORED 1 POINT IN BOTH CATEGORIES (FIGURE 26). THE OTHER CHILD WHO SHARED THE TEACHER'S HIGHEST RATING FOR INTELLIGENCE AND ACADEMIC SKILLS SCORED 3 IN HORIZONTALITY, 1 IN VERTICALITY.

ANOTHER SURPRISE WAS FINDING HIGHLY EDUCATED ADULTS WITH LOW SCORES. IN WORKSHOPS FOR TEACHERS AND OTHER PROFESSIONALS, THERE WERE ALWAYS A FEW WHO HAD DIFFICULTY WITH THE TESTS. FIGURES 27 AND 28 ARE EXAMPLES.

HOW CAN THESE FINDINGS BE EXPLAINED? IT MAY BE THAT WE ARE ALL HANDICAPPED IN SOME WAYS. PERHAPS ADULTS AND CHILDREN WHO SAY THEY CANNOT DRAW A STRAIGHT LINE MAY HAVE SUBTLE COGNITIVE IMPAIRMENTS EASILY OVERLOOKED BECAUSE OUR SCHOOLS EMPHASIZE VERBAL AND ANALYTICAL SKILLS AND IT DOES NOT MATTER VERY MUCH IF STUDENTS CANNOT DRAW. LEFT HEMISPHERE SKILLS ARE DEVELOPED, PERHAPS AT THE EXPENSE OF CERTAIN RIGHT HEMISPHERE SKILLS. SUBTLE COGNITIVE STRENGTHS MAY BE ESCAPING DETECTION. THESE STRENGTHS MAY WELL BE IMPORTANT IF THEY CAN HELP HANDICAPPED CHILDREN LEARN CONCEPTS TRADITIONALLY LEARNED THROUGH LANGUAGE.

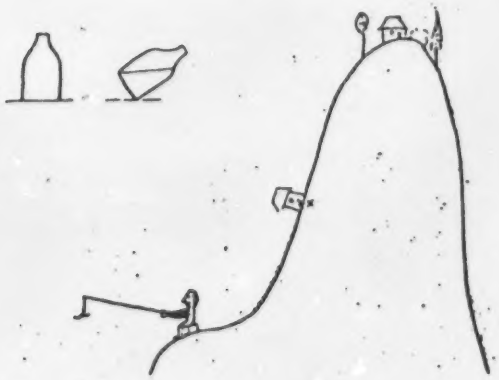
26. PREDICTIVE DRAWING, NORMAL STUDENT



Lori, 8, received her teacher's highest rating for intelligence and academic skill.

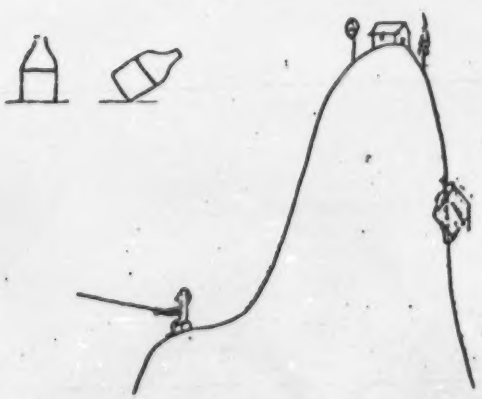
Score: horizontality - 1
verticality - 1

27. PREDICTIVE DRAWING, ADULT IN A WORKSHOP FOR TEACHERS AND OTHER PROFESSIONALS



Score: horizontality - 4
verticality - 1

28. PREDICTIVE DRAWING, ADULT IN ANOTHER SUCH WORKSHOP



Score: horizontality - 1
verticality - 2

CREATIVE GROWTH

SOME ART EDUCATORS FEEL THAT EMPHASIS ON COGNITION WILL INTERFERE WITH AESTHETIC LEARNING, WHILE SOME ART THERAPISTS FEEL THAT STRUCTURING ART EXPERIENCE WILL REDUCE SPONTANEITY OF EXPRESSION. THE TEACHING PROCEDURES DESCRIBED HERE ARE BASED ON THE ASSUMPTION THAT AESTHETIC AND THERAPEUTIC GOALS DO NOT NECESSARILY CONFLICT, AND THAT ART EXPERIENCES CAN BE SIMULTANEOUSLY EDUCATIONAL AND THERAPEUTIC. OUR ASSUMPTION WAS PUT TO THE TEST WHEN WE ASKED AN ART THERAPIST AND A UNIVERSITY PROFESSOR OF ART TO JUDGE DRAWINGS PRODUCED IN THE EXPERIMENTAL ART CLASSES. (THE PICTURES WERE IDENTIFIED ONLY BY NUMBER AND AGE OF THE CHILD). THEY FOUND STATISTICALLY SIGNIFICANT IMPROVEMENTS IN SKILL AND EXPRESSIVENESS.

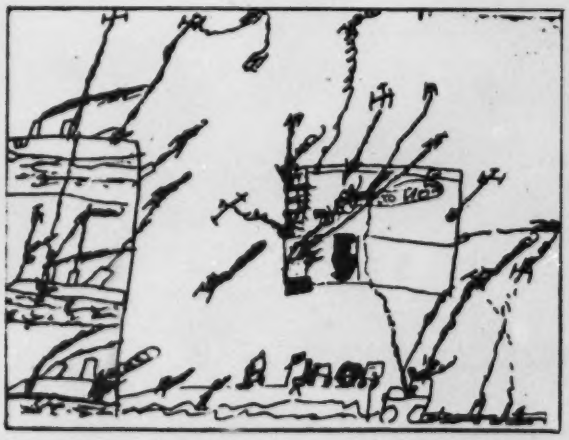
THE FOLLOWING EXAMPLES OF CREATIVE GROWTH IN INDIVIDUAL CHILDREN INDICATE THAT ONE DEVELOPMENTAL NEED DOES NOT HAVE TO BE SACRIFICED FOR ANOTHER. IN FACT, THEY SEEM TO REINFORCE EACH OTHER.

29. BURT, 13, FIRST PERIOD

Receptive and expressive language impairment and severe hearing loss

Here, Burt drew a faceless man with a knife in his stomach, and stopped. He asked the therapist to draw his likeness on the blackboard. Then he drew the face and the house and car.

Score: Select - 1
Combine - 1
Represent - 1



30. BURT, SECOND PERIOD

Burt chose a car and a knife, but did not draw them. Instead, he drew this scene.

Both of Burt's drawings are fragmentary, having a jumble of points of view; yet there is a difference between the two. In the first (29), his subjects are related only in the most elementary way. In Fig. 30, his subjects are joined by conventional symbols of dotted lines and scribbles.

Score: 2 in each category

31. BURT, THIRD PERIOD

In this period, the children were given paints. Burt worked hard, but his hands trembled and his attempts to retrieve drops of paint with the palette knife usually made matters worse.

Score: No score because there is no representation

32. BURT, FIFTH PERIOD

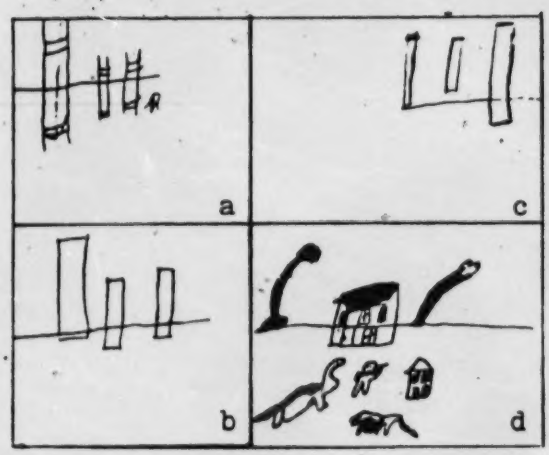
Different images were presented in the fifth art period. Burt chose a nurse (which showed only her head and shoulders). He drew the nurse full-length, combined with an object of his own invention: crutches. This painting is organized in both form and content. He placed the forms on the paper as though he used its edges as frames of reference. The functional relationship between nurse and crutches suggests that Burt had a story in mind.

Score: 4 in each category

33. BURT, FIFTH PERIOD

With time to spare in his fifth art period, he made this painting. When he had finished, he talked about it. His words were written on the blackboard by the therapist; Burt copied them on his painting.

Score: 4 in each category



34 A-D, BURT, SEVENTH & EIGHTH PERIODS

Burt's progress in drawing from observation is evident. His first attempt (a) missed the depth relationship; his second (b) related the cylinders correctly, but omitted the toy bug. In his third attempt (c) he changed places with a classmate at the opposite side of the arrangement and the reversed position of the objects apparently confused him.

(d) This landscape is an accurate representation of the seven objects presented only one week after the cylinder tests. Distances, proportions, and lateral and depth relationships are accurate. Burt's earlier misrepresentations were not pointed out to him; therefore, his gains reflect his own observations and corrections.

35. BURT, NINTH PERIOD

He explained this painting from imagination as follows: the house suspended above the landscape will not fall down. The baby fish is eating its mother. On her body are its bites. A boy sitting on the dock is watching. Another boy (behind the crosshatching) is in jail. They can't fish because the sign says no. Between them is a fish graveyard.

Score: 5 in each category

Burt's progress in the art program was significant. On pretests, he scored 36 out of a possible 70 points (on a 1-to-5 scale). On the posttests, he scored 66.

36. VITO, 8, FIRST PERIOD

Profound receptive language impairment and hearing loss

In his first drawing from imagination, there is little relationship between barely recognizable objects.

Score: 2 in each category

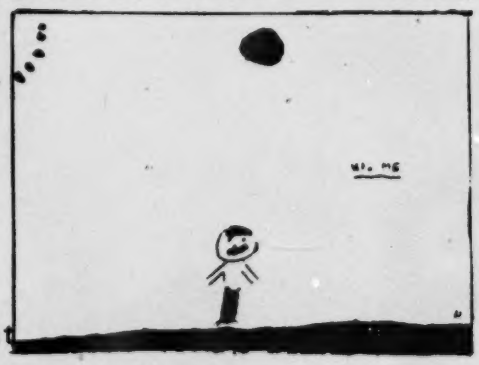
37. VITO, SECOND PERIOD

Vito selected the mouse, bug, and a man from the stimulus cards. With most of his paper left blank, he seems to have made a collection of the small and weak, including himself.

38. VITO, THIRD PERIOD

The absence of hands on his self-portrait may reflect a feeling of inadequacy; but even though the figure still occupies a small part of his paper, it is now at center stage.

Score: 2 - ability to select
3 - ability to combine
4 - ability to represent



39. VITO, FOURTH PERIOD

Once again, Vito has selected and combined at the lowest levels, and this time, his name is spelled backward.

Score: 2 - ability to select
2 - ability to combine
3 - ability to represent

40. VITO, FIFTH PERIOD

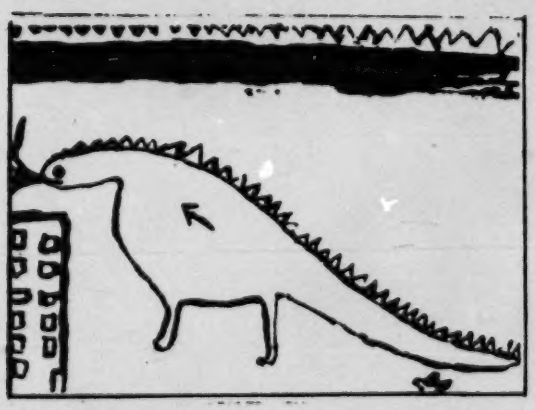
He said he had painted a magician holding the egg which had been inside the hat on the table beside him. This may reflect a feeling of achievement since, for the first time, Vito mixed colors on his palette, producing green for the ground.

Score: 3 in each category

41. VITO, EIGHTH PERIOD

This painting began in imitation of a classmate's painting. In Vito's painting, the girl dominates. She says, "I got fish," and the boy says nothing. When the therapist said, 'Vito, you don't have to copy anyone, you have very good ideas of your own," he wrote his name in formations of flying birds.

Score: 5 in each category



42. VITO, NINTH PERIOD

Here, the tiny figure at the lower right is firing an arrow into the dinosaur's flank, suggesting that Vito may have gained courage in dealing with dinosaurs of his own.

Score: 5-ability to select
4-ability to combine
5-ability to represent

ADULT STROKE PATIENTS

TO DETERMINE IF THE DRAWING TESTS COULD SERVE TO EVALUATE THE COGNITIVE SKILLS OF ADULTS WHO COULD NOT COMMUNICATE WELL VERBALLY, THE TESTS WERE GIVEN TO EIGHT ADULT STROKE PATIENTS SUFFERING VARYING DEGREES OF LANGUAGE IMPAIRMENT.

THE DRAWING TESTS IDENTIFIED STROKE PATIENTS WITH COGNITIVE AND PERCEPTUAL SKILLS OVERLOOKED BY PREVIOUS DIAGNOSTIC TESTS JUST AS THEY HAD IDENTIFIED HANDICAPPED CHILDREN WITH COGNITIVE ABILITIES OVERLOOKED BY TRADITIONAL TESTS OF INTELLIGENCE. FOR EXAMPLE, BURT'S I.Q. WAS ESTIMATED AT ONLY 43 (STANFORD-BINET).

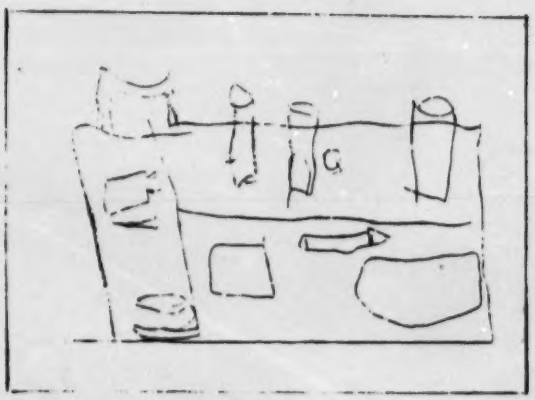
WHETHER THE DRAWING STRATEGIES COULD ALSO BE USEFUL IN REMEDIATION IS A QUESTION WORTH EXPLORING.

43. GARY, STROKE PATIENT DRAWING FROM IMAGINATION

Gary, 15, was paralyzed on both sides of his body, with movement limited to two fingers of his left hand. He could not sit unsupported. He seemed to understand what was said to him, however, and although he did not speak, he communicated by using an alphabet board.

He chose just one stimulus image - the car - and with a felt-tipped pen between his two functioning fingers drew two cars. He used the cartoon device of a balloon around the upper car and the moon, indicating that it was the lower car's fantasy. Then he spelled out a title, "Dreaming About a Dune Buggy."

The idea of a car dreaming about another suggests that Gary was not only alert, but had a lively imagination. The car could represent his immobilized self dreaming about romance. This drawing shows that Gary's ability to select, combine, and represent was intact.



44. GARY, DRAWING FROM IMAGINATION

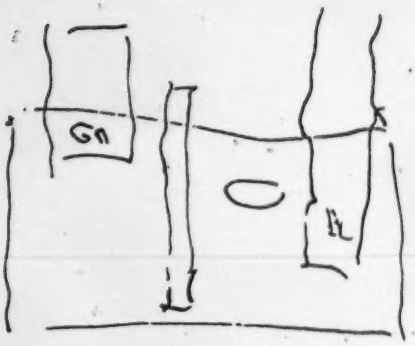
Gary was so enthusiastic that he included the cylinder arrangement and nearby furniture. His ability to perceive and represent spatial relationships, in three dimensions, was intact.

45. MRS. VERNE, STROKE PATIENT

Unable to speak, Mrs. Verne performed only one of eleven tasks. The art therapist drew several incomplete figures; each time Mrs. Verne scribbled over their faces and then attempted to trace over some lines.

46. MRS. VERNE

Mrs. Verne was rapt with attention when the art therapist drew her portrait. thereafter she drew a face smiling. Did she progress from scribbles to drawing because her attention was caught and held by her own likeness? Was it because she had ample time to associate and integrate the moving pencil with the lines produced?



47A. MRS. MOORE'S DRAWING FROM OBSERVATION

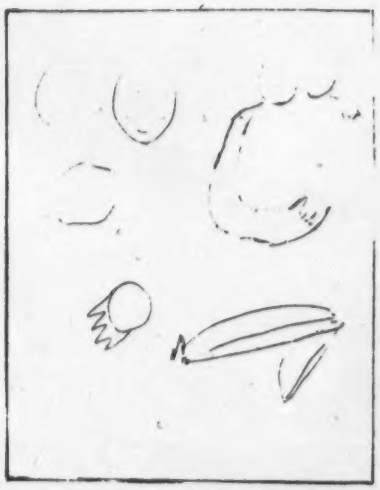
47. MRS. MOORE, STROKE PATIENT

Although Mrs. Moore easily performed most of the exercises, she did not combine subjects in her drawings from imagination. This difficulty seemed to parallel her inability to talk, just as the ease with which she selected subjects seemed to parallel her ability to understand what was said. In aphasia, ability to select is said to remain intact, while ability to combine is impaired. Would improvement in ability to combine in a drawing carry over to improvement in expressive language?

47B. MRS. MOORE'S DRAWING FROM IMAGINATION

48 A-B. MRS. JENSEN
STROKE PATIENT

Except for difficulty in using verbs, Mrs. Jensen had recovered from a stroke. Like the verbs missing from her sentences, actions and interactions were missing from her drawings. She drew people and objects in isolation (a). She was able to draw the second picture (b) only after a pebble was placed in her hand. Asked if she could draw her subjects acting out a verb, she completed both figures from imagination, added the background, then wrote the title, "Adam is touching a apple."



48A.

48B.

OBSERVATIONS

THERE IS AN URGENT NEED TO RECONSIDER OUR EXPECTATIONS ABOUT THE CAPABILITIES OF HANDICAPPED CHILDREN AND ADULTS, AND TO TAKE A CLOSER LOOK AT THE ROLE ART CAN PLAY. THESE FINDINGS INDICATE THAT ART PROCEDURES CAN ENABLE US TO ASSESS AND DEVELOP COGNITIVE SKILLS WITHOUT NEGLECTING ART SKILLS. THEY SUGGEST THAT IT WOULD BE WORTHWHILE TO CONTINUE TO EXAMINE OUR ASSUMPTIONS ABOUT ART, LEARNING, AND THE HANDICAPPED. DR. SILVER'S STUDIES ARE CONTINUING AT THE COLLEGE OF NEW ROCHELLE (NEW YORK), SUPPORTED BY A GRANT FROM THE NATIONAL INSTITUTE OF EDUCATION.

GLOSSARY

- AN EXPERIMENTAL GROUP IS ONE SELECTED FOR HAVING THE CHARACTERISTIC ONE WISHES TO STUDY.
- A CONTROL GROUP IS RANDOMLY SELECTED AND/OR MATCHED WITH AN EXPERIMENTAL GROUP, BUT IT DOES NOT HAVE THE CHARACTERISTICS ONE WISHES TO STUDY. IN THESE STUDIES THE CONTROL GROUPS DID NOT HAVE THE ART EXPERIENCES THAT WERE GIVEN CHILDREN IN THE EXPERIMENTAL GROUPS.
- COGNITION IS THE PROCESS OF KNOWING.
- LANGUAGE IMPAIRMENTS ARE CAUSED BY DAMAGE TO EITHER THE BRAIN OR THE CENTRAL NERVOUS SYSTEM.
- EXPRESSIVE LANGUAGE IMPAIRMENT IS DIFFICULTY IN PRODUCING LANGUAGE
- RECEPTIVE LANGUAGE IMPAIRMENT IS DIFFICULTY IN COMPREHENDING LANGUAGE.
- BILATERAL HEARING LOSS INVOLVES REDUCTION IN HEARING CAPABILITY in BOTH EARS.
- A VISUAL-MOTOR HANDICAP IS AN IMPAIRED ABILITY EITHER TO COORDINATE BODY OR HAND MOVEMENT WITH SIGHT OR TO SEE AND PERFORM WITH DEXTERITY.